CLAIMS

1. A metal ion eluting unit including:

a plurality of electrodes; and

a drive circuit that applies a voltage between the electrodes,

the metal ion eluting unit eluting metal ions from one of the electrodes serving as a positive electrode by applying the voltage between the electrodes,

wherein the metal ion eluting unit further comprises:

a control circuit that controls the drive circuit so that the drive circuit

periodically reverses a polarity of the voltage applied between the electrodes,

operates, from when the polarity of the voltage applied between the electrodes is reversed until a predetermined period elapses, in a first current mode in which a value of a current flowing between the electrodes equals a first value, and

operates thereafter in a second current mode in which a value of the current flowing between the electrodes equals a second current value which is different from the first current value.

2. The metal ion eluting unit according to claim 1,

wherein the first current value is larger than the second current value.

3. The metal ion eluting unit according to claim 1,

wherein a period of the first current mode is shorter than a period of the second current mode.

4. The metal ion eluting unit according to claim 1,

wherein the drive circuit performs constant-voltage driving during the period of the first current mode and constant-current driving during the period of the second current mode.

5. The metal ion eluting unit according to claim 1,

wherein the polarity of the voltage applied between the electrodes is periodically reversed with a voltage application rest time inserted during every reversal.

6. The metal ion eluting unit according to claim 1,

wherein transfer from the first current mode to the second current mode occurs with a voltage application rest time inserted therebetween.

7. The metal ion eluting unit according to claim 5,

wherein a short-circuit is made between the electrodes during the voltage application rest time.

8. The metal ion eluting unit according to claim 6,

wherein a short-circuit is made between the electrodes during the voltage application rest time.

9. The metal ion eluting unit according to claim 1, further comprising a water quality detection portion which detects water quality of water existing between the electrodes,

wherein the control circuit changes at least one of the first current value and the second current value in accordance with the water quality detected by the water quality

detection portion.

10. The metal ion eluting unit according to claim 1, further comprising a water detection portion which detects water quality of water mediating between the electrodes,

wherein the control circuit changes at least one of a time ratio of a period of the first current mode to a period of the second current mode and a polarity reversal period of the voltage applied between the electrodes in accordance with the water quality detected by the water quality detection portion.

11. The metal ion eluting unit according to claim 9

wherein the water quality detection portion detects at least one of water hardness, water electric conductivity, and water chloride ion concentration.

12. The metal ion eluting unit according to claim 10,

wherein the water quality detection portion detects at least one of water hardness, water electric conductivity, and water chloride ion concentration.

13. The metal ion eluting unit according to claim 9

wherein the water detection portion detects the water quality by detecting at least one of the voltage between the electrodes and the current flowing between the electrodes.

14 The metal ion eluting unit according to claim 10

wherein the water detection portion detects the water quality by detecting at least one

of the voltage between the electrodes and the current flowing between the electrodes.

15. The metal ion eluting unit according to claim 1,

wherein part or all of the metal ions eluted are any of silver ions, copper ions, and zinc ions.

16. An apparatus, comprising the metal ion eluting unit according to any of claims 1 to 15.

17. The apparatus according to claim 16,

wherein the apparatus is a washing machine.